



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/982,794	10/22/2001	Shih-Hsiung Ni	108339-00080	8401
32294	7590	03/25/2005	EXAMINER	
SQUIRE, SANDERS & DEMPSEY L.L.P. 14TH FLOOR 8000 TOWERS CRESCENT TYSONS CORNER, VA 22182			DIVECHA, KAMAL B	
			ART UNIT	PAPER NUMBER
			2151	

DATE MAILED: 03/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

HL

Office Action Summary	Application No. 09/982,794	Applicant(s) NI, SHIH-HSIUNG	
	Examiner KAMAL B. DIVECHA	Art Unit 2151	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input checked="" type="checkbox"/> Other: <u>FOREIGN PATENT DOC.</u> |

DETAILED ACTION

Claims 1-13 are presented for examination.

Information Disclosure Statement

The examiner has considered the IDS.

Claim Objections

1. Claim 2, 3, 7, 8, 11 and 12 are objected to because of the following informalities:
applicant is requested to spell the acronym "SPI-4". Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 6 and 10 are rejected under 35 U.S.C. 103(a) as being obvious over Milway et al (U. S. Patent No. 6,122,279) in view of Sheth (U. S. Patent No. 4,613,954), and further in view of Thompson, Michael I. (herein known as Thompson, EP 0 572 145 A2).

As per claim 1, Milway discloses a network device (fig. 1) comprising: an ingress module having an input interface to receive a cell of the data packet (col. 8 L39-47); a header detector configured to detect a header of a cell of the data packet and remove the header from the cell of the data packet (col. 9 L4-25 and col. 11 L44-58; col. 12 L27-29), however, Milway does not disclose a network device configured to prevent data misalignment of a data packet containing extra header bytes, comprising: a counter to determine whether the cell of the data packet contains a multiple of a predetermined number of bytes after the header has been removed; an

insertion module configured to insert null bytes into the cell of the data packet to form a modified cell of the data packet if the counter determines that the cell of the data packet does not satisfy the multiple of the predetermined number of bytes; and an extraction module configured to remove the null bytes from the modified cell of the data packet as the modified cell of the data packet exits the network device.

Sheth discloses: a counter to determine whether the cell of the packet (read as block of data) contains a multiple of a predetermined number of bytes after the header has been removed (col. 13 L19-34) and an insertion module (read as data link processor) configured to insert null bytes into the cell of the data packet to form a modified cell of the data packet if the counter determines that the cell of the data packet does not satisfy the multiple of the predetermined number of bytes (col. 13 L19-34). Therefore, it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to incorporate the teaching of Sheth as stated above with the network device of Milway in order to determine whether the cell contains multiple of a predetermined number of bytes and to insert null bytes into the cell to form a modified packet.

One of ordinary skilled in the art would have been motivated because this would have determined the number of bytes in a cell and based on the determination it would have inserted the pad byte into the cell in order to align the headers and the cell.

However, Milway in view of Sheth does not disclose an extraction module configured to remove the null bytes from the modified cell of the data packet as the modified cell of the data packet exits the network device. Thompson, from the same field of endeavor, discloses: a network adapter configured to prevent data misalignment of a data packet, containing extra

header bytes (col. 1 L30-38), comprising: an insertion module configured to insert null bytes into the cell of the data packet to form a modified cell of the data packet if the counter determines that the cell of the data packet does not satisfy the multiple of the predetermined number of bytes (col. 1 L30-34; col. 5 L10-15, L29-37; fig 9; col. 4 L34-37); and an extraction module configured to remove the null bytes from the modified cell of the data packet as the modified cell of the data packet exits the network device (col. 6 L35-46). Therefore, it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to incorporate the teaching of Thompson as stated above with the network device of Milway in view of Sheth in order to insert and remove the null bytes from the cell.

One of ordinary skilled in the art would have been motivated because the network device discloses by Thompson would have performed the alignment of network headers (Thompson, col. 4 L34-37). It would have also improved the performance of the computing system and network data to simplify the assembly and deciphering of header fields for data, which is sent across the network (col. 3 L15-20).

As per claim 6, Thompson further discloses forwarding the modified cell of the data packet to an output port (col. 6 L30-46). And, therefore, claim 6 is rejected for the same reasons as set forth in claim 1 above.

As per claim 10, it does not teach or further define over the limitations in claims 1 and 6. Therefore, claim 10 is rejected for the same reasons as set forth in claim 1 and 6 above.

4. Claims 2-4, 7-8 and 11-12 are rejected under 35 U.S.C. 103(a) as being obvious over Milway et al (U. S. Patent No. 6,122,279) in view of Sheth (U. S. Patent No. 4,613,954), and

further in view of Thompson, Michael I. (herein known as Thompson, EP 0 572 145 A2), and further in view of Denton et al. (U. S. Patent No. 6,567,413 B1).

As per claim 2, Milway, Sheth, nor Thompson disclose the network device as in claim 1 wherein network device comprises an aggregator (read as data transferring device) that interfaces with an Ethernet and a SPI-4 communication system.

Denton explicitly discloses a multi-protocol processor comprising data transmitting processors interfacing with an Ethernet and a SPI-4 communication interfaces (fig. 2). Therefore, it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to incorporate the teaching of Denton as stated above with method and system of Milway, Sheth, and Thompson for the purpose of interfacing an aggregator with an Ethernet and SPI-4 communication interfaces.

One of ordinary skilled in the art would have been motivated because it would performed data link and physical sub-layer processing on the egress and ingress data in accordance with a selected one of plurality of supported protocols, enabling communication of packetized data between different types of communication networks (Denton, col. 4 L5-8).

As per claim 3, Milway, Sheth, nor Thompson disclose the network device as in claim 1 wherein the aggregator (read as data transferring device) is configured to interface between a twelve 1-Gigabit ports (read as gigabit module having 12 ports) and one 12 Gigabit/s SPI-4 uplink. Denton discloses a multi-protocol processor comprising data transmitting processors configured to interface between Gigabit Ethernet module and SPI-4 uplink module (fig. 2 item #204-#222). Therefore, it would have been obvious to a person of ordinary skilled in the art to modify Denton to configure data transferring device (path processor) to interface between 12-

port GBIC module and one SPI-4 uplink. One of ordinary skilled in the art would have been motivated because it would have enabled communication of packetized data between egress and ingress modules or communications between the Ethernet module and the uplink.

As per claim 4, Milway explicitly discloses a network switch (fig. 1).

As per claim 7-8 and 11-12, they do not teach or further define over the limitations in claim 2-4. Therefore, claims 7-8 and 11-12 are rejected for the same reasons as set forth in claim 2-4.

5. Claims 5, 9 and 13 are rejected under 35 U.S.C. 103(a) as being obvious over Milway et al (U. S. Patent No. 6,122,279) in view of Sheth (U. S. Patent No. 4,613,954), and further in view of Thompson, Michael I. (herein known as Thompson, EP 0 572 145 A2), and further in view of Yik et al. (U. S. Patent No. 6,697,873 B1).

As per claim 5, Milway in view of Sheth and further in view of Thompson, disclose the network device as in claim 1 further comprising: a layer two switching module configured to build a routing table (Milway, col. 4 L4-41 and fig. 10) and to instruct the extraction module to remove the null bytes from the modified cell of the data packet as the modified cell of the data packet exits the network device (Thompson, col. 6 L35-46), however, Milway in view of Sheth and further in view of Thompson does not disclose a medium access control protocol module having a MAC address for transmitting the modified cell of the data packet.

Yik explicitly discloses an apparatus comprising a frame-forwarding device including MAC address tables (see abstract, fig. 2 and col. 2L20-31). Therefore, it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to

incorporate the teaching of Yik as stated above with the network device and method of Milway in view of Sheth and further in view of Thompson in order to include a MAC module for transmitting the modified cell of the data packet.

One of ordinary skilled in the art would have been motivated because it would have increased the performance of the network by forwarding the frames to the correct output port associated with the particular MAC address (Yik, col. 2 L20-31).

As per claim 9 and 13, they do not teach or further define over the limitations in claim 5. Therefore, claims 9 and 13 are rejected for the same reasons as set forth in claim 5.

Additional References

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


- a. Kunimoto et al., U. S. Patent No. 5,101,404.
- b. Lai et al., U. S. Patent No. 6,789,144 B1.
- c. Kurano et al., U. S. Patent No. 5,249,178.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KAMAL B. DIVECHA whose telephone number is 571-272-5863. The examiner can normally be reached on 9.00am-5.30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zarni Maung can be reached on 571-272-3939. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



GLENTON B. BURGESS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100